

## **SOLUBILITY REPORTER GENE CONSTRUCTS**

### **ABSTRACT OF THE DISCLOSURE**

- 5           The present invention provides polynucleotides that a protein solubility responsive promoter operatively linked to a reporter gene and a genetic reporter system comprising these polynucleotides together with an expression construct for a target protein. The invention also provides cells comprising polynucleotides of the invention and the genetic reporter system. These compositions are useful to monitor the solubility of a target protein in a cell and to
- 10   identify mutations to the cell or mutations to a polynucleotide encoding the target protein that alters the solubility of the target protein. The invention further provides method to identify variations in a protein biosynthetic process that alter the solubility of a target protein and methods to screen an expression library of recombinant clones to identify clones that express soluble proteins. Finally, the invention discloses a novel method of identifying an
- 15   antibiotic agent.